What is claimed is:

Claim 1. A modified trans-excision-splicing Group I ribozyme comprising at least two modifiable recognition elements, wherein at least one of said recognition elements is complementary to non-native target RNA sequence within a substrate and at least one of said recognition elements stabilizes binding of the ribozyme to a trans-excision splicing (TES) reaction intermediate product, and wherein the ribozyme catalyzes a specific excision of the non-native target RNA sequence and splices the 5' end of the substrate created by the excision to an ωG of the 3' end of the substrate created by the excision.

Claim 2. The ribozyme of claim 1 wherein the non-native target sequence is a single nucleotide.

Claim 3. The ribozyme of claim 1 wherein the non-native sequence comprises a premature stop codon.

Claim 4. The method of claim 1 wherein the non-native sequence comprises a frameshift mutation.

Claim 5. The ribozyme of claim 1 wherein the at least one recognition element is complementary to the triplet expansion associated with Muscular Dystrophy.

Claim 6. The ribozyme of claim 5 wherein the ribozyme is rP-8/4x-MD.

Claim 7. The ribozyme of claim 1 wherein the ribozyme is a modified *P. carinii* ribozyme.

Claim 8. The ribozyme of claim 1 wherein at least one exon has been removed from the ribozyme.

Claim 9. The ribozyme of claim 8 wherein the response elements are separated by

Claim 10. A method of removing a non-native nucleotide sequence from a target nucleic acid sequence comprising contacting the target nucleic acid sequence with a modified trans-excision-splicing Group I ribozyme comprising at least two modifiable recognition elements, wherein at least one of said recognition elements is complementary to the non-native target sequence and at least one of said recognition elements stabilizes binding of the ribozyme to a trans-excision splicing (TES) reaction intermediate product, and wherein the ribozyme catalyzes a specific excision of the non-native target sequence and splices together the 5' and 3' ends of the substrate created by the excision.

Claim 11. The method of claim 10 wherein the target sequence is a single nucleotide.

Claim 12. The method of claim 10 wherein the target sequence comprisies a premature stop codon.

Claim 13. The method of claim 10 wherein the target sequence comprises a frameshift mutation.

Claim 14. The method of claim 10 wherein the target sequence comprises a triplet expansion repeat associated with disease.

Claim 15. The method of claim 14 wherein the disease is Muscalar Dystrophy.

Claim 16. The method of claim 15 wherein the ribozyme is rP-8/4x-MD.

Claim 17. A method of treating a disease associated with a genetic mutation comprising administering to a patient in need thereof a modified trans-excision-splicing Group I ribozyme comprising at least two modifiable recognition elements, wherein at least one of said recognition elements is complementary to non-native target sequence associated with the disease and at least one of said recognition elements stabilizes binding of the ribozyme to a trans-excision splicing (TES) reaction intermediate product, and wherein the ribozyme catalyzes a specific excision of

the non-native target sequence and splices together the 5' and 3' ends of the substrate created by the excision.

Claim 18. The method of claim 17 wherein the non-native target sequence comprises a single nucleotide.

Claim 19. The method of claim 17 wherein the non-native target sequence comprises a premature stop codon.

Claim 20. The method of claim 17 wherein the non-native target sequence comprisies a frameshift mutation.

Claim 21. The method of claim 17 wherein the non-native target sequence comprises an expanded triplet repeat sequence.

Claim 22. The method of claim 21 wherein the expanded triplet repeat sequence is associated with Muscular Disease.

Claim 23. The method of claim 17 wherein the disease is Muscular Dystrophy.

Claim 24. The method of claim 17 wherein the ribozyme is rP-8/4x-MD.

Claim 25. An expression cassette comprising a promoter operably-linked to a nucleotide sequence encoding a trans-excision-splicing ribozyme comprising comprising at least two modifiable recognition elements, wherein at least one of said recognition elemens is complementary to non-native target RNA sequence within a substrate and at least one of said recognition elements stabilizes binding of the ribozyme to a trans-excision splicing (TES) reaction intermediate product, and wherein the ribozyme catalyzes a specific excision of the non-native target RNA sequence and splices the 5' end of the substrate created by the excision to an ωG of the 3' end of the substrate created by the excision.

Claim 26. A method of removing an internal expanded triplet repeat sequence from an RNA molecule comprising contacting the RNA molecule with the ribozyme of claim 1.

Claim 27. A method of removing a premature stop codon from a mutant RNA sequence comprising contacting the mutant RNA sequence with the ribozyme of claim 1.